

DOCUMENT RESUME

ED 430 696

PS 027 630

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TITLE The Effects of Social Behavior on Fourth and Fifth Grade Girls' Perceptions of Physically Attractive and Unattractive Peers.
PUB DATE 1999-04-00
NOTE 10p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Albuquerque, NM, April 15-18, 1999).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Comparative Analysis; *Elementary School Students; *Females; Intelligence; Intermediate Grades; Interpersonal Competence; Peer Relationship; *Physical Attractiveness; Popularity; *Social Behavior; *Student Attitudes
IDENTIFIERS Likability

ABSTRACT

Despite abundant research relating physical attractiveness and social skill, no studies have systematically assessed the influence of social behavior on perceived attractiveness. This study experimentally investigated how exposure to positive, negative, and neutral childhood behaviors influences ratings of physical attractiveness and other social judgments known to co-exist within the attractiveness stereotype. The study further examined whether social behavior might moderate the effects of attractive or unattractive appearance over time. Participating were 111 Caucasian and 64 Non-Caucasian fourth- and fifth-grade girls, randomly assigned to rate the attractiveness, intelligence, popularity, and likability of either a facially attractive or an unattractive stimulus girl shown in a video still photograph. Participants were then randomly assigned to view the same stimulus girl in a series of 10 videotaped vignettes in which she interacted with a peer in either a positive, negative, or neutral manner. After viewing the videos, subjects completed the rating a second time. The results indicated that attractiveness was highly correlated with judgments of intelligence, popularity, and likability based on photographs prior to exposure to behavior, with correlations ranging from .59 to .77. Further, behavior was a strongly moderating factor in peer judgments. Positive behavior increased and negative behavior decreased ratings of attractiveness and other social judgments regardless of the attractiveness level of the stimulus girl. Neutral behavior frequently had a positive effect on attractiveness ratings and social judgments for the unattractive stimulus girl. (Contains 11 references.) (Author/KB)

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Paper presented at the biennial meeting of the Society for Research in Child Development, Albuquerque, New Mexico, April 1999

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Despite abundant research relating physical attractiveness and social skill, no studies have systematically assessed the influence of social behavior on perceived attractiveness. Several authors have commented on the relative lack of research in this area (e.g., Berscheid & Walster, 1974; Burns & Farina, 1992; Calvert, 1988). In addition, while a substantial body of research suggests that physical attractiveness produces various positive halo effects, little research looks at whether children's ratings of their peers' attractiveness (and of associated stereotyped judgments) change as they become better acquainted.

The present study experimentally investigated how exposure to positive, negative, and neutral childhood behaviors influences ratings of physical attractiveness and other social judgments known to co-exist within the attractiveness stereotype. It further examined whether social behavior might moderate the effects of attractive or unattractive appearance over time.

METHODS

Participants

Fourth and fifth grade girls (111 Caucasian, 64 Non-Caucasian) were randomly assigned to rate the attractiveness, intelligence, popularity and likability of either a facially attractive or an unattractive stimulus girl shown in a videostill photograph. Participants were then randomly assigned to view the same stimulus girl in a series of 10 videotaped vignettes in which she interacted with a peer in either a positive, negative or neutral manner. After viewing the videos, girls completed the ratings a second time.

Design and procedures

Girls were randomly assigned within ethnicity to rate the attractiveness, intelligence, popularity and likability of either a facially attractive or an unattractive stimulus girl shown in a videostill photograph. Participants were then randomly assigned to view the same stimulus girl in a series of 10 videotaped vignettes in which she interacted with a peer in either a positive, negative or neutral manner. After viewing the videos, girls completed the ratings a second time. This produced a 2 (attractiveness of the stimulus girl) x 3 (behavior of the stimulus girl) x 2 (time) mixed factorial design. Because preliminary analyses showed that ethnicity interacted with some of the independent variables, ethnicity of participant was also examined as a variable in this study.

Stimulus materials

Actresses. Unattractive and attractive Caucasian stimulus girls were selected based on adult and child judges' ratings of potential stimulus girls' attractiveness in pilot studies; ratings of the videostills by the participants also verified this manipulation, $F(1,174)=37.15$, $p<.0001$, $\eta^2=.18$. Child judges ($n = 18$) rated the attractive girl 5.83 and the unattractive girl 3.22 on a 1-7 scale (1 = "very ugly," 7 = "very pretty").

Videotapes. Videotaped vignettes were created and portrayed the stimulus girl interacting in positive (e.g., helping, initiating friendship), negative (e.g., pushing, excluding), or neutral (e.g., asking neutral questions) ways with a hypothetical peer in a classroom setting. The same moderately-attractive confederate girl played the peer role in all videotapes. Girls followed scripts for each vignette; vignettes filmed with the attractive and unattractive girl were identical in setting, script, etc. Three adult judges' ratings indicated that videotapes were similar in acting quality across actresses and conditions (average rating, 5.60-5.88 for the experimental conditions; 1 = "very bad acting," 7 = "very good acting").

Dependent variables. Girls completed an 8-item questionnaire after viewing the videostill of the target girl, and again after seeing the videotapes showing her behavior with a peer. Two items assessed each of four variables: attractiveness, intelligence, popularity and liking. Internal consistencies for the 2-item scales were acceptable (range, .71-.93). Three additional items in the post test asked whether participants had prior knowledge of the study or the girls in the videotapes; none did.

RESULTS

Correlations

Attractiveness ratings correlated highly with judgments of intelligence, popularity, and liking made based on videostill photographs prior to exposure to behavior ($.59 \leq r_s \leq .77$, $ps < .01$), supporting previous research.

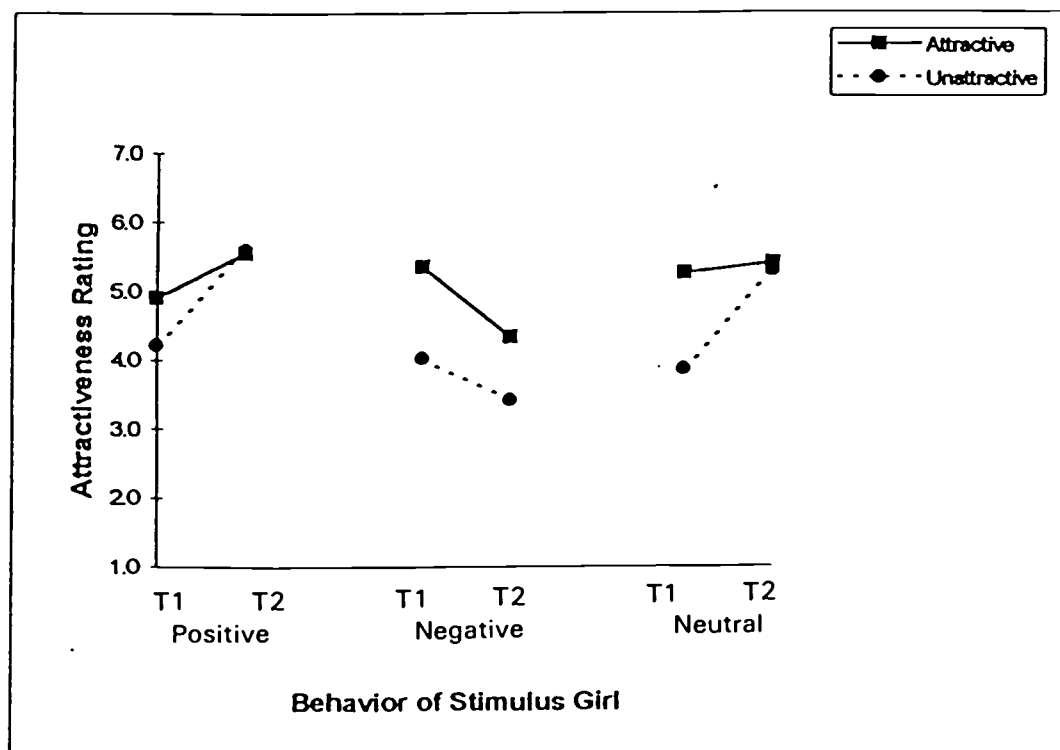
MANOVA and ANOVAs

A 2 (Ethnicity) X 2 (Attractiveness) X 3 (Behavior) X 2 (Time) MANOVA with one repeated measure (Time) evaluated perceptions of attractiveness, intelligence, popularity and liking. The MANOVA revealed significant main effects for ethnicity, $F(4,160)=2.95$, $p<.022$, $\eta^2=.06$, attractiveness, $F(4,160)=6.29$, $p<.0001$, $\eta^2=.13$, behavior, $F(8,320)=22.29$, $p<.0001$, $\eta^2=.36$, and time, $F(4,160)=22.40$, $p<.0001$, $\eta^2=.36$. A significant time by attractiveness interaction, $F(4,160)=6.78$, $p<.0001$, $\eta^2=.15$, and a significant time by behavior interaction also emerged, $F(8,320)=34.64$, $p<.0001$, $\eta^2=.46$. We therefore conducted four follow-up univariate 2 (Ethnicity) X 2 (Attractiveness) X 3 (Behavior) X 2 (Time) ANOVAs. Dunn's (Bonferroni) post hoc test was used to examine significant effects that emerged in the ANOVAs.

Physical Attractiveness. The ANOVA for ratings of physical attractiveness as the dependent variable showed significant effects for attractiveness of the stimulus female, $F(1,163)=18.58$, $p<.0001$, $\eta^2=.10$, behavior, $F(2,163)=10.10$, $p<.0001$, $\eta^2=.11$, an attractiveness by behavior interaction, $F(2,163)=3.16$, $p<.04$, $\eta^2=.03$, a time by attractiveness interaction, $F(1,163)=21.28$, $p<.0001$, $\eta^2=.12$, and a time by behavior interaction, $F(2,163)=51.41$, $p<.0001$, $\eta^2=.39$. All of these were qualified by a time by attractiveness by behavior interaction, $F(2,163)=3.19$, $p<.04$, $\eta^2=.04$.

Examination of the 3-way interaction indicated that behavior was a strongly moderating factor in peer judgments of attractiveness. Positive behaviors led to significantly increased and negative behaviors led to significantly decreased ratings of attractiveness regardless of the attractiveness level of the stimulus girl, and eliminated differences in perceived attractiveness between the two girls. Neutral behavior led to significantly improved attractiveness ratings for the unattractive (but not the attractive) girl (see Figure 1).

Figure 1 — Mean Ratings of Attractiveness for the Attractive and Unattractive Stimulus Girl Before and After Exposure to Positive, Negative or Neutral Behavior



Significant main effects were also found for time, $F(1,163)=6.60$, $p<.001$, and ethnicity, $F(1,163)=7.06$, $p<.009$, $\eta^2=.06$, both of which were qualified by a time by ethnicity by behavior interaction, $F(2, 163)=3.38$, $p<.03$, $\eta^2=.04$. Bonferroni post hoc comparisons examining the time by ethnicity by behavior interaction revealed that independent of the attractiveness level of the stimulus girl, attractiveness ratings by Caucasian and non-Caucasian participants increased over time in the positive behavior condition. In the negative condition, non-Caucasian participants rated the stimulus girls significantly lower in attractiveness over time whereas Caucasian participants' ratings of attractiveness did not change significantly over time. In the neutral condition, Caucasian participants rated the stimulus females higher in attractiveness over time when displaying neutral behaviors, but no significant changes in ratings of attractiveness were found for non-Caucasian participants.

Intelligence. Participants did not rate attractive and unattractive girls differently on intelligence, in contrast to numerous studies that suggested that attractive females were perceived to also be intelligent (Byrnes, London & Reeves, 1968; Clifford & Walster, 1973; Landy & Sigall, 1974; Lerner & Lerner, 1977). Instead, there were significant effects for ethnicity, $F(1,163)=8.08$, $p<.005$, $\eta^2=.05$, behavior, $F(1,163)=48.77$, $p<.0001$, $\eta^2=.37$, and the time by behavior interaction, $F(2,163)=106.83$, $p<.0001$, $\eta^2=.57$. Caucasian participants rated the stimulus females as more intelligent ($M=5.16$, $SD=1.36$) than did the non-Caucasian participants ($M=4.83$, $SD=1.23$).

The interaction between behavior and time indicated that social behavior strongly influenced ratings of intelligence. Ratings of intelligence significantly increased after the girls viewed positive behavior, decreased after negative behavior, and did not change after neutral behavior (see Table 1).

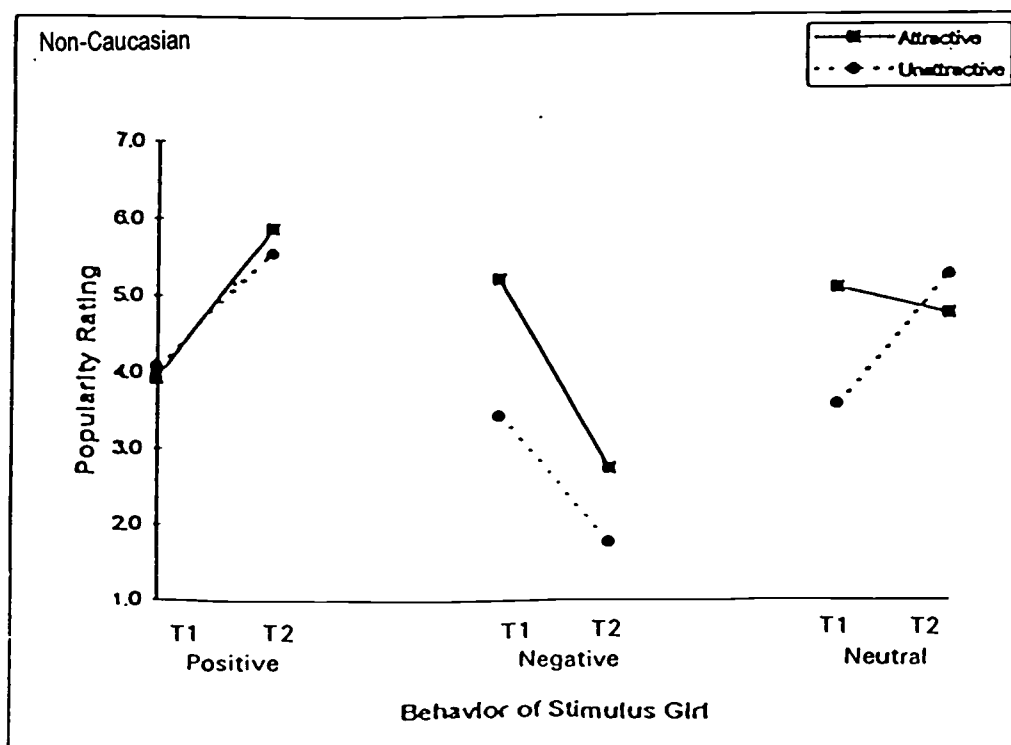
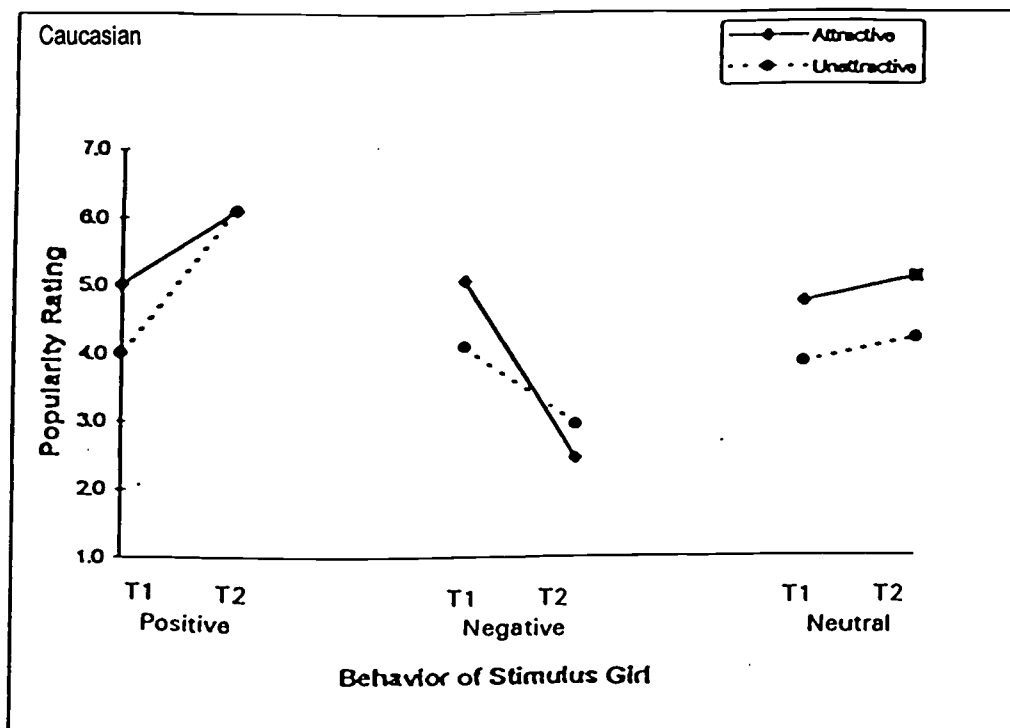
Table 1. Mean Ratings of Intelligence (with SDs) before and after Exposure to Positive, Negative or Neutral Behavior (Collapsed across Attractiveness Levels)

Behavioral Condition	Pre-Test	Post-Test
Positive	5.07 (1.24)	6.27 (.74)
Negative	5.11 (1.03)	3.12 (1.28)
Neutral	5.18 (1.05)	5.54 (1.09)
Intelligence ratings could range from 1 ("very dumb") to 7 ("very smart")		

Popularity. Ratings of popularity showed significant effects for attractiveness, $F(1,163)=23.13$, $p<.001$, $\eta^2=.06$, behavior, $F(2,163)=39.07$, $p<.0001$, $\eta^2=.32$, the time by attractiveness interaction, $F(1,163)=17.46$, $p<.0001$, $\eta^2=.10$, and the time by behavior interaction, $F(2,163)=97.79$, $p<.0001$, $\eta^2=.55$. These were all qualified by a significant ethnicity x attractiveness x behavior x time interaction. This resulted because Caucasian and

Non-Caucasian girls reacted in different ways to positive and neutral behavior conditions (see Figure 2). Caucasian and Non-Caucasian girls responded similarly to negative behavior. They rated attractive and unattractive stimulus girls significantly less popular over time.

Figure 2 — Caucasian and Non-Caucasian Participants' Mean Ratings of Popularity for the Attractive and Unattractive Stimulus Girl Before and After Exposure to Positive, Negative or Neutral Behavior



Contrary to previous research, Caucasian participants did not rate the attractive girl as more popular than the unattractive girl prior to exposure to behavioral conditions. When positive behavior was introduced, the unattractive stimulus girl's popularity increased over time whereas the attractive girl's popularity did not change. No significant changes occurred after exposure to neutral behavior.

Non-Caucasian participants rated both the attractive and unattractive stimulus girl as significantly improved in popularity after exposure to positive behavior. The unattractive girl's popularity ratings improved significantly after she engaged in neutral behavior while the attractive girl's popularity remained unchanged.

Liking. Liking ratings mirrored in many ways the other social judgments made by participants. Analyses showed a main effect for time, $F(1,163)=34.13$, $p<.0001$, $\eta^2=.17$, behavior, $F(2,163)=87.44$, $p<.0001$, $\eta^2=.52$, a time by attractiveness interaction, $F(1,163)=5.66$, $p<.01$, $\eta^2=.03$, a time by behavior interaction, $F(2,163)=186.17$, $p<.0001$, $\eta^2=.70$, an attractiveness by behavior interaction, $F(2,163)=3.31$, $p<.03$, $\eta^2=.04$, and an ethnicity by behavior interaction, $F(2,163)=3.40$, $p<.03$, $\eta^2=.04$.

Examination of the time x behavior interaction indicated that the attractive stimulus girl was better liked than the unattractive stimulus girl prior to any exposure to behavior (see Table 2). Once behavior was introduced, girls were better liked over time in the positive condition and liked less over time in the negative condition regardless of level of attractiveness. Liking ratings did not change over time for girls engaging in neutral behaviors. Examination of the ethnicity x behavior interaction indicated no significant differences between Caucasian and Non-Caucasian participants.

Table 2. Mean Liking Ratings (with Standard Deviations) for the Attractive and Unattractive Stimulus Girl (Collapsed across Behavioral Conditions)

	Pre-Test	Post-Test
Attractive	5.31 (1.25)	4.50 (1.54)
Unattractive	4.81 (1.34)	4.35 (1.54)
Liking ratings could range from 1 (Dislike her very much/Would dislike it a lot) to 7 (Like her a lot/Would like it a lot)		

DISCUSSION

Two major conclusions emerge from the results. First, attractiveness influences how children judge their peers. Initial ratings of the stimulus girls revealed differences between the attractive and unattractive girls for liking ratings and, in some instances, on ratings of popularity. These findings corroborate those of a host of studies demonstrating the effects of attractiveness on first impressions (e.g., Dion & Berscheid, 1974; Krantz, 1987; Spence, 1987; Zakin, 1983). Second, and more importantly, behavior is a strongly moderating factor in peer judgments, and

can modify perceptions of attractiveness and social judgments under certain circumstances. Specifically, positive behaviors increased and negative behaviors decreased ratings of attractiveness and other social judgments regardless of the attractiveness level of the stimulus girl. In addition, neutral behavior frequently had a positive effect on attractiveness ratings and social judgments for the unattractive girl.

These findings must of course be qualified by limitations of the study. The vignettes depicted only two stimulus girls, one moderately unattractive and one moderately attractive. Although the content and setting of the conditions was carefully controlled, it is possible that the attractive and unattractive girls differed on dimensions not assessed in this study. Second, the analog nature of the study allowed excellent experimental control of extraneous variables, but raises questions about the generalizability of results to the natural environment. Third, all girls rated Caucasian stimulus girls, and it would have been desirable to have included a non-Caucasian dyad as well to be able to determine whether the few ethnic differences were more attributable to the ethnicity of the rater or the fact that the stimulus girls and the non-Caucasian raters came from different ethnic groups. Finally, the small number of non-Caucasian girls did not permit us to look at specific ethnic groups, an obvious weakness of the study.

In spite of these limitations, our findings support the contention that perceived attractiveness is not a static characteristic, but instead changes as girls become more acquainted with a peer's positive or negative social repertoire. They also support the importance of looking beyond the role of attractiveness in impression formation, and examining instead how the role of appearance, behavior, and other characteristics interact and change over time as relationships evolve.

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